

REMARKS

Favorable reconsideration and allowance of the claims of the present application are respectfully requested.

In the present Office Action, Claims 1 and 6 are objected to because of minor informalities which are discussed at page 2 of the outstanding Office Action. In response to the claim objections, applicants have amended Claim 1 by changing the phrase "A memory array comprises" to "A memory array comprising". This amendment to Claim 1 is consistent with the change suggested by the Examiner in the outstanding Office Action.

With respect to Claim 6, applicants have amended that claim by changing the phrase "said at least one second memory cell" to "said at least one second memory device". Antecedent basis for the foregoing phrase "said at last one second memory device" is found in Claim 1.

Applicants respectfully submit that the above amendments to Claims 1 and 6 obviate the informalities to those claims raised in the outstanding Office Action. As such, applicants respectfully request that the Examiner reconsider and withdraw the claim objections.

In addition to the above amendments to Claims 1 and 6, applicants have amended Claim 1 to positively recite that the claimed offset buried strap *is located at a depth that is different from the depth of the first buried strap, and is positioned on a second collar region*, and that the claimed second collar region *including at least said offset buried strap has a length equal to a length of the claimed first collar region that includes at least said first buried strap*.

Support for the above amendment to Claim 1 can be found in the drawings of the originally filed application as well as in the processing details that are used in forming the inventive structure.

In addition to the amendment to Claim 1, applicants have cancelled the non-elected claims, i.e., Claims 11-20. The cancellation of these claims is being made without prejudice or

disclaimer and, as such, applicants reserve their right to file a divisional application directed to those claims.

Applicants have also added new Claim 21 which is a combination of original Claims 1 and 8. Applicants observe that since original Claim 8 was deemed allowable in the outstanding Office Action, new Claim 21 is allowable as well.

Since the above amendments to the claims do not introduce any new matter into the specification of the instant application, entry thereof is respectfully requested.

In the outstanding Office Action, Claims 1, 5, 6 and 10 stand rejected under 35 U.S.C. § 102(a) as allegedly anticipated by applicants' admitted prior art (AAPA) which is illustrated in FIG. 1 of the originally filed application. Claims 1 and 2 stand rejected under 35 U.S.C. § 102(a) as allegedly anticipated by U.S. Patent Application Publication No. 2003/0132438 to Jang ("Jang"). Claims 1, 4-6 and 10 stand rejected under 35 U.S.C. § 102(a) as allegedly anticipated by U.S. Patent No. 6,605,838 to Mandelmann et al. ("Mandelmann et al."). Claim 1 stands rejected under 35 U.S.C. § 102(a) as allegedly anticipated by U.S. Patent No. 6,570,207 to Hsu et al. ("Hsu et al.").

In addition to the anticipation rejections, the outstanding Office Action also includes the following obviousness rejections: Claim 3 stands rejected under 35 U.S.C. § 103 as allegedly unpatentable over the disclosure of Hsu et al. Claim 7 stands rejected under 35 U.S.C. § 103 as allegedly unpatentable over the disclosure of Mandelmann et al.

Concerning the § 102 rejections, it is axiomatic that anticipation under § 102 requires that the prior art reference disclose each and every element of the claim to which it is applied. In re King, 801 F.2d, 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1996). Thus, there must be no differences between the subject matter of the claim and the disclosure of the prior art reference. Stated another way, the reference must contain within its four corners adequate direction to

practice the invention as claimed. The corollary of the rule is equally applicable: Absence from the applied reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986).

Applicants respectfully submit that the claimed structure, as recited in Claim 1 of the present application, is not anticipated by AAPA, Jang, Mandelmann et al. and Hsu et al. Specifically, none of the applied references disclose a memory array including: at least one first-type memory device, each of said at least one first-type memory device comprising a first transistor and a first underlying capacitor that are in electrical contact to each other through a first buried strap, said first buried strap positioned on a first collar region; and at least one second-type memory device, each of said at least one second-type memory device comprising a second transistor and a second underlying capacitor that are in electrical contact to each other through an offset buried strap, ***said offset buried strap is located at a depth that is different from the depth of the first buried strap, and is positioned on a second collar region, wherein said second collar region including at least said offset buried strap has a length equal to a length of said first collar region including at least said first buried strap.***

AAPA which is illustrated in FIG. 1 includes laterally spaced apart buried straps 15 that overlap, in part, collar oxide regions (not labeled). The structure illustrated by FIG. 1 of the present application does not disclose an *offset buried strap that is located at a depth that is different from the depth of the first buried strap*. As such, applicants respectfully submit that the claimed structure is not anticipated by AAPA as is illustrated by FIG. 1 of the originally filed application.

Jang discloses a structure that is similar to the one illustrated in FIG. 1 of the present application. Specifically, Jang discloses a structure including laterally spaced apart buried straps 132, 132a which overlap, in part, a collar oxide region 122b. The prior art structure does not

however disclose a structure including *an offset buried strap that is located at a depth that is different from the depth of a first buried strap*. In view of the foregoing remarks, Jang does not anticipate the claimed structure.

Mandelmann et al. discloses a structure that is similar to that illustrated in FIG. 1 of the present application as well. Specifically, Mandelmann et al. discloses a structure illustrated by FIG. 1 that includes laterally spaced apart buried straps 34 which overlap, in part, a collar region 32. The prior art structure does not however disclose a structure including *an offset buried strap that is located at a depth that is different from the depth of a first buried strap*. In view of the foregoing remarks, Mandelmann et al. does not anticipate the claimed structure.

Hsu et al. discloses a structure including a buried strap region 27 and a buried strap region 13 wherein said buried strap region 27 is located at a different depth than the buried strap region 13. In accordance with the disclosure of Hsu et al., the buried strap region 27 is located on a collar region of a first length, while the buried strap region 13 is located on a collar region of a second length which is shorter than the first strap. The prior art structure illustrated and disclosed in Hsu et al. does not anticipate the claimed structure which requires *that said second collar region including at least said offset buried strap has a length equal to a length of said first collar region including at least said first buried strap*. In view of the foregoing remarks, Hsu et al. does not anticipate the claimed structure.

The foregoing remarks clearly demonstrate that the applied references do not teach each and every aspect of the claimed invention, as required by King and Kloster Speedsteel; therefore the claims of the present application are not anticipated by AAPA and the disclosures of Jang, Mandelmann et al. and Hsu et al. Applicants respectfully submit that the instant § 102 rejections have been obviated and withdrawal thereof is respectfully requested.

With respect to the obviousness rejections citing Hsu et al. and Mandelmann et al., applicants submit that the claims of the present invention are not rendered unpatentable by the disclosures of Hsu et al. and Mandelmann et al. since none of the applied references teach or suggest applicants' claimed structure. Specifically, neither applied reference teaches or suggests disclose a memory array including: at least one first-type memory device, each of said at least one first-type memory device comprising a first transistor and a first underlying capacitor that are in electrical contact to each other through a first buried strap, said first buried strap positioned on a first collar region; and at least one second-type memory device, each of said at least one second-type memory device comprising a second transistor and a second underlying capacitor that are in electrical contact to each other through an offset buried strap, *said offset buried strap is located at a depth that is different from the depth of the first buried strap, and is positioned on a second collar region, wherein said second collar region including at least said offset buried strap has a length equal to a length of said first collar region including at least said first buried strap.*

As stated above, Hsu et al. discloses a structure including a buried strap region 27 and a buried strap region 13 wherein said buried strap region 27 is located at a different depth than the buried strap region 13. In accordance with the disclosure of Hsu et al., the buried strap region 27 is located on a collar region of a first length, while the buried strap region 13 is located on a collar region of a second length which is shorter than the first strap. The prior art structure illustrated and disclosed in Hsu et al. does not render the claimed structure obvious since the claimed structure requires *that said second collar region including at least said offset buried strap has a length equal to a length of said first collar region including at least said first buried strap.* Applicants find not teaching or suggestion in Hsu et al. to motivate one skilled in the art

to modify the disclosed structure to that which is presently claimed. In view of the foregoing remarks, Hsu et al. does not render the claimed structure obvious.

Insofar as Mandlemann et al. is concerned, it is observed that the applied reference discloses a structure illustrated by FIG. 1 that includes laterally spaced apart buried straps 34 which overlap, in part, a collar region 32. The prior art does not however teach or suggest a structure including *an offset buried strap that is located at a depth that is different from the depth of a first buried strap*, as presently claimed. In view of the foregoing remarks, Mandelmann et al. does not render the claimed structure obvious.

The various §103 rejections also fail because there is no motivation in the applied references which suggest modifying the disclosed structure to include the various elements and corresponding structural relationship as is recited in the claims of the present invention. Thus, there is no motivation provided in the applied references, or otherwise of record, to make the modification mentioned above. "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Vaeck, 947 F.2d, 488, 493, 20 USPQ 2d. 1438, 1442 (Fed.Cir. 1991).

The rejections under 35 U.S.C. §103 have been obviated; therefore reconsideration and withdrawal thereof is respectfully requested.

Thus, in view of the foregoing amendments and remarks, it is firmly believed that the present case is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'LSS', with a horizontal line extending to the right.

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